


# PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

Applicant's or agent's file reference SMC 60525/WO	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/GB 03/02438	International filing date (day/month/year) 05.06.2003	Priority date (day/month/year) 07.06.2002
International Patent Classification (IPC) or both national classification and IPC C09B35/02		
Applicant AVECIA LIMITED et al.		

- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 6 sheets, including this cover sheet.  
  
☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  
  
These annexes consist of a total of sheets.

- This report contains indications relating to the following items:
  - I ☒ Basis of the opinion
  - II ☐ Priority
  - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - IV ☐ Lack of unity of invention
  - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - VI ☐ Certain documents cited
  - VII ☐ Certain defects in the international application
  - VIII ☐ Certain observations on the international application

Date of submission of the demand  19.11.2003	Date of completion of this report  11.08.2004
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Wörth, C  Telephone No. +49 89 2399-8726



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB 03/02438

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-26 as originally filed

**Claims, Numbers**

1-11 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

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**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes: Claims	
	No: Claims	1-11
Inventive step (IS)	Yes: Claims	
	No: Claims	1-11
Industrial applicability (IA)	Yes: Claims	1-11
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

**1. Re Item I Basis of the opinion**

Reference is made to the following documents:

D1: JP(A) 59075965  
D2: JP(A) 2002020659  
D3: US-A-3445450  
D4: EP-A-0508443  
D5: US-A-4361842  
D6: US-A-3546202  
D7: GB-A-1123094  
D8: FR-A-1486243  
D9: US-A-3527749

**2. Re Item V Reasoned statement under Art. 35(2) PCT with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**2.1 Subject-matter**

The present international application discloses

- disazo compounds characterized by a central 1,8-dihydroxynaphthalene moiety (claim 6),
- a process for their preparation (claim 4),
- compositions containing them (claim 3) and
- their use as dyes for ink jet printing (claims 1, 9 and 10).

**2.2 Novelty**

Document D1 discloses azo dyes for water based inks for ink jet printing falling within the definition of present formula (I) of claims 1 and 6 (see e.g. examples 5 and 16).

Document D3 discloses in claims 1-6 metal-containing disazo-dyestuffs falling within the definition of formula (I) suitable inter alia for printing cellulose materials, thereby falling within the scope of claim 1.

Documents D5-D10 disclose bisazochromotropic acid derivatives falling within the scope of claim 6 (see D5, col. 4, lines 36-51; see D6, claim 1, see D7, examples

1-13; see D8, examples; see D9, examples 2,3 and 9).

***Accordingly, the subject-matter of the present application is not novel over the cited prior art.***

The subject-matter of the present application differs from document D2 in view of present proviso (ii) excluding compounds with two or more hydroxy groups ortho to the -N=N- group.

The subject-matter of the present application differs from document D4 in view of the fact that D4 does not disclose bisazo-dyes having a central 1,8-dihydroxynaphthylene group.

### **2.3 Inventive step**

In view of the fact, that there is at present no novelty establishing feature recognizable with respect to the prior art, a final decision concerning inventive step cannot be taken. However, the following is provisionally stated:

Documents D1 and D2 are considered as relevant state of the art. Both documents disclose azo compounds having a central 1,8-dihydroxynaphthylene group as ink jet printing dyes.

In view of these documents, the problem to be solved can be regarded as the provision of further azo compounds as dyes for ink jet printing.

The solution to this problem consists in compounds of formula (I) of claim 1 and 6.

In view of the examples, the problem is considered as being solved.

However, the provided solution is obvious in view of the teaching of documents D1 and D2. Starting from D2, the provided solution consists merely in the omission of a hydroxyl group ortho to the -N=N- group. However, document D1 shows that hydroxyl groups in ortho position to the azo group are not necessary in order to obtain dyes for ink jet printing preventing nozzles from clogging.

The Applicant declares the claimed subject-matter as possessing outstanding properties (see page 1, lines 24-25). However, no such unexpected effects indicating an inventive step have so far been shown.

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Accordingly, the man skilled in the art would not be surprised obtaining dyes for ink jet printing by the provision of compounds of formula (I) starting from the combined technical teaching of documents D1 and D2.

As far as the claimed scope is concerned, it appears not to be credible that all claimed alternatives (reference is made to the non-limiting terms "optionally substituted") solve the problem given. In other words, if it is not obvious for the skilled person to arrive at IJP dyes starting from D2 by omitting an ortho-hydroxyl group, then it is not apparent on which teaching the same skilled person would rely to generalise the tested examples to the claimed scope.

***The requirements of inventive step are not fulfilled.***